



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: AE3007A2 BYPASS RATIO: 4.8  
 UNIQUE ID NUMBER: 01P10AL033 PRESSURE RATIO ( $\pi_{co}$ ): 20.2  
 COMBUSTOR: Type 3 (reduced emissions)  
 ENGINE TYPE: MTF RATED THRUST ( $F_{oo}$ ) (kN): 42.2

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	5.3	90.0	49.9	0.0
AS % OF ORIGINAL LIMIT	27.1	76.2	62.0	0.0
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			77.6	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			81.7	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			83.8	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			90.8	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>oo</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.466	0.00	0.71	18.61	0.0
CLIMB OUT	85	2.2	0.388	0.00	0.74	15.99	0.0
APPROACH	30	4.0	0.138	0.00	4.08	7.90	0.0
IDLE	7	26.0	0.055	1.71	34.17	4.39	0.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			189	146	3095	1817	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)				3.5	73.3	43.0	0.0
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3
TEMPERATURE (K)	294
ABS HUMIDITY (kg/kg)	0.009-0.012

### FUEL

SPEC	Jet A
H/C	1.9
AROM (%)	16-20

MANUFACTURER: Rolls-Royce Corporation  
 TEST ORGANIZATION: Rolls-Royce Corporation  
 TEST LOCATION: Indianapolis, Indiana  
 TEST DATES: 09/06/2001-11/06/2001

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

- For effectivity see Rolls-Royce Notice to Operators No. AE3007A-076
- Data in this form for AE3007A2 engine fitted with reduced emissions combustor & AB fuel nozzles
- Results based on Rolls-Royce report EDRs 19587 and 22949
- Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
- NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation, '- ' if information is not available)